



THAT NAME IS QUALITY AND IT'S A FACT

**WELDED**  
**Solid Steel**  
**WINDOWS**  
*and*  
**DOORS**

**Commodity Price List**

Effective

**JANUARY 1, 1937**

Subject to Change Without Notice

**FEDERAL STEEL SASH COMPANY**  
WAUKESHA, WISCONSIN

All prices shown are list and are subject to discount in accordance with current Discount Sheets.

Quotations are f.o.b. Shipping Point with freight allowed at Railroad Published Tariff rates to destination.

Glass and Putty are not included in List Prices. Steel Sash, Litharge or Standard Glaziers putty must be used. Do not use commercial putty.

12-2-634 9650

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# FEDERAL

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## FEDERAL INDUSTRIAL WINDOW CONSTRUCTION

### SIZES

Windows are made to the United States Department of Commerce Standards.

### MATERIALS

Material is mild open hearth steel, sections either hot-rolled or drawn to form.

ALL JOINTS AND CONNECTIONS ARE ELECTRIC ARC WELDED. No dovetail, mitre or interlocking joints are used. This construction gives Federal the strongest Window made.

Square and true to dimension.

Will not rack out of shape.

No ridges or projections to collect dust and moisture.

No open joints where water can enter and start corrosion.

All surfaces accessible for easy painting.

Double Contact weathering on all four sides of Ventilators.

Easier and cost less to install and maintain than other Windows.

Adjustable Mullions allow for adjustment vertically and horizontally, are easily set by one man without pinning or drifting.

Windows are shipped with hardware attached, except bronze hardware which is boxed separately ready for installation, and with spring wire copper coated glazing clips, and bolts and clips for installing.

Windows are given one coat of oxide paint at Factory. Ventilators can be screened.

In ordering be sure to order by number as shown on Price List and give proper glass size. Specify type of Ventilator, whether Horizontal Pivoted, Commercial Projected with vent projecting in, or Commercial Projected with vent projecting out.

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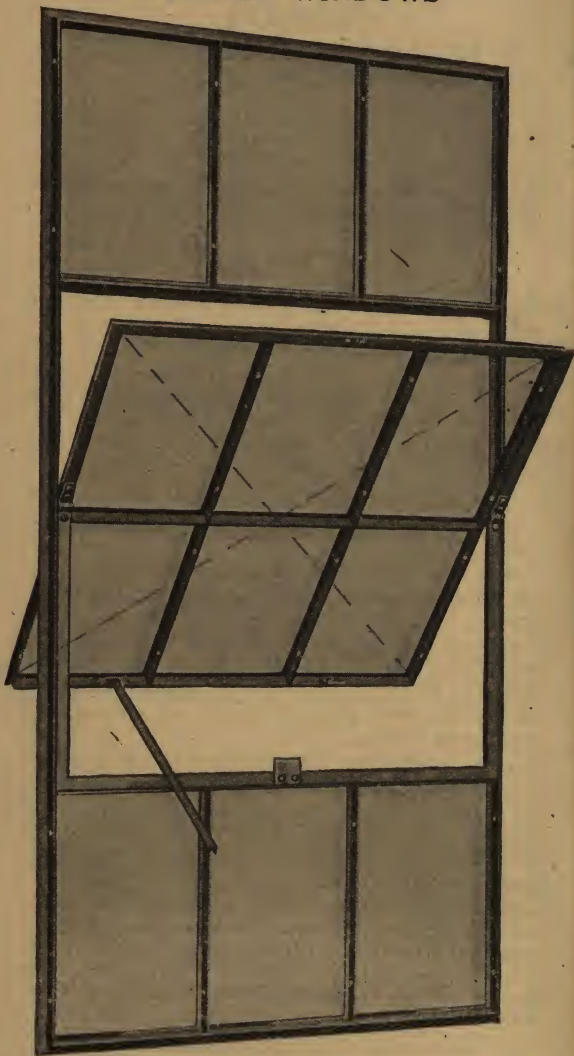
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# FEDERAL

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## PIVOTED WINDOWS



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34161<sup>2</sup>

# **FEDERAL**

## **PIVOTED WINDOWS**

**Glazed on inside face with spring wire clips and putty.**

**Double Contact Weathering at head, jambs and sill of Ventilator.**

**Heavy Pressed Steel Pivot with Bronze Pin.** Projects only  $\frac{5}{8}$ " from face of Window and is located 2" above center of Ventilator.

**Draw Tight Push Bar.** Standard equipment on 6 and 8 light Ventilators and always furnished unless Cam Latch is specifically called for. Permits of opening of Ventilator  $\frac{1}{8}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$  or full 90°. When Ventilator is closed, folds back out of way and locks Ventilator.

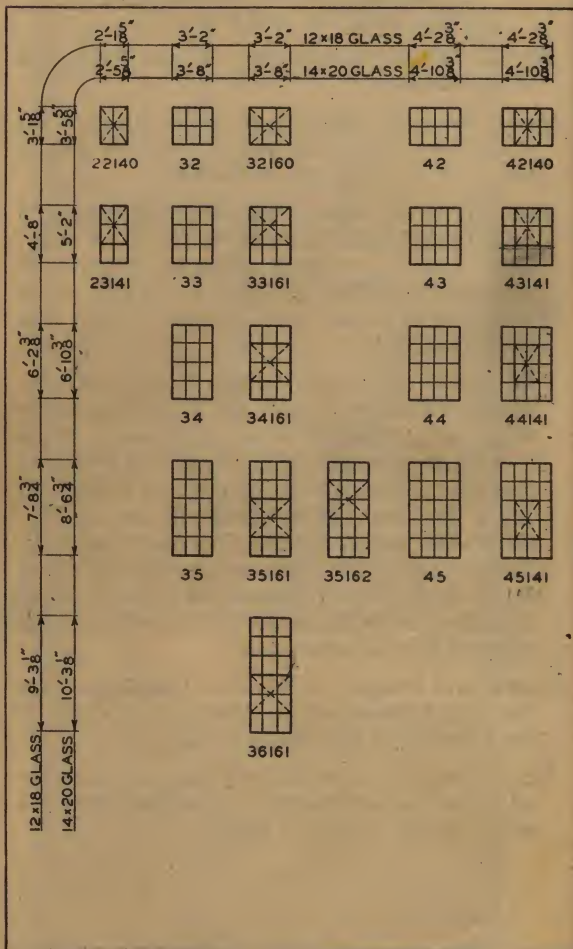
**Cam Latch and Chain** furnished as standard on 4 light Ventilators and on 6 and 8 light Ventilators only when specified. Cam Latch operates by means of a chain attached to the Latch and running through a pressed steel Roller attached to the head of the Ventilator. Should be specified on all Windows where the sill is more than 4'-6" from floor. Ventilator is held open by engaging the chain in a clip attached to the Window or to the wall. When Cam Latch and Chain are specified always give sill height of Window above floor.

**Width and Height of Window Openings.** See Table of Symmetrical Combinations on Page 14. See Pages 4 and 5 for Single Units.

**Dimensions shown are wall openings and not overall dimensions of Window.** For overall dimension add 1" to both width and height.

# FEDERAL

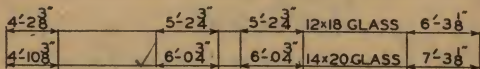
## PIVOTED WINDOWS





# FEDERAL

## PIVOTED WINDOWS



42180



52



52160



62180



43181



53



53161



63181



44181



54



54161



64181



45181



45182



55



55161



55162



65181



46181



56161

# FEDERAL

## PIVOTED WINDOWS

### LIST PRICES

12 x 18			14 x 20	
Area	List	Window	List	Area
7	\$ 9.00	22140	\$10.00	9
10	10.00	23141	11.00	13
10	6.00	32	6.00	13
10	11.00	32160	12.00	13
15	7.00	33	7.00	19
15	12.00	33161	13.00	19
20	8.00	34	9.00	25
20	14.00	34161	15.00	25
25	10.00	35	11.00	31
25	15.00	35161	17.00	31
25	15.00	35162	17.00	31
29	17.00	36161	18.00	38
13	6.00	42	7.00	17
13	11.00	42140	12.00	17
13	13.00	42180	14.00	17
20	8.00	43	9.00	25
20	13.00	43141	14.00	25
20	15.00	43181	16.00	25
26	10.00	44	11.00	33
26	15.00	44141	16.00	33
26	16.00	44181	18.00	33
33	12.00	45	14.00	42
33	17.00	45141	18.00	42
33	18.00	45181	20.00	42
33	18.00	45182	20.00	42
39	20.00	46181	22.00	50

Heavy face types — Stock.

Light face types — Non-Stock.

Prices are subject to change without notice.



# FEDERAL

## PIVOTED WINDOWS

### LIST PRICES

12 x 18			14 x 20		
Area	List	Window	List	Area	
16	\$ 7.00	52	\$ 8.00	21	
16	13.00	52160	14.00	21	
24	10.00	53	11.00	31	
24	15.00	53161	16.00	31	
32	12.00	54	13.00	42	
32	17.00	54161	19.00	42	
40	15.00	55	16.00	52	
40	20.00	55161	22.00	52	
40	20.00	55162	22.00	52	
48	22.00	56161	24.00	62	
20	15.00	62180	16.00	25	
29	17.00	63181	19.00	37	
39	20.00	64181	22.00	50	
48	23.00	65181	25.00	62	

### MULLIONS

Area	With		Without	Size	Without		Area
	Covers	Covers			Covers	Covers	
.5	\$2.00	\$1.00	2	Light	\$1.50	\$3.00	.6
.8	3.00	1.50	3	Light	2.00	4.00	.9
1.0	4.00	2.00	4	Light	2.50	5.00	1.1
1.3	5.00	2.50	5	Light	3.00	6.00	1.4
1.5	6.00	3.00	6	Light	3.50	7.00	1.7

**IMPORTANT NOTE:** When ordering, be sure to specify whether push bar or cam latch and chain hardware is desired, otherwise standard equipment will be furnished as described on Page 3. When cam latch and chain is specified, be sure also to state distance from floor to sill of the Window for purpose of computing length of chain required.

**Heavy face types — Stock.**

**Light face types — Non-Stock.**

**Prices are subject to change without notice.**

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# FEDERAL

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PROJECTED WINDOWS



9622403

# **FEDERAL**

## **PROJECTED WINDOWS**

**Glazed on inside face with spring wire clips and putty.**

**Double Contact Weathering at head, jambs and sill of Ventilator.**

**Ball Bearing Bronze Friction Guide at sliding corners of Ventilator. Steel Balancing Arms.**

**Malleable Iron Cam Latch and Pole Ring on Ventilators projecting out from sill.**

**Spring Catch on Ventilators projecting in from head.**

**Bronze Hardware can be furnished in place of Malleable Iron upon specification at an increased list price per Ventilator.**

**Standard Projected Ventilators — 2 lights high open out from the sill and down from the head. Ventilators opening in from the head and up from the sill can be furnished on specification without added cost. Ventilators one light high open in from the head and up from the sill.**

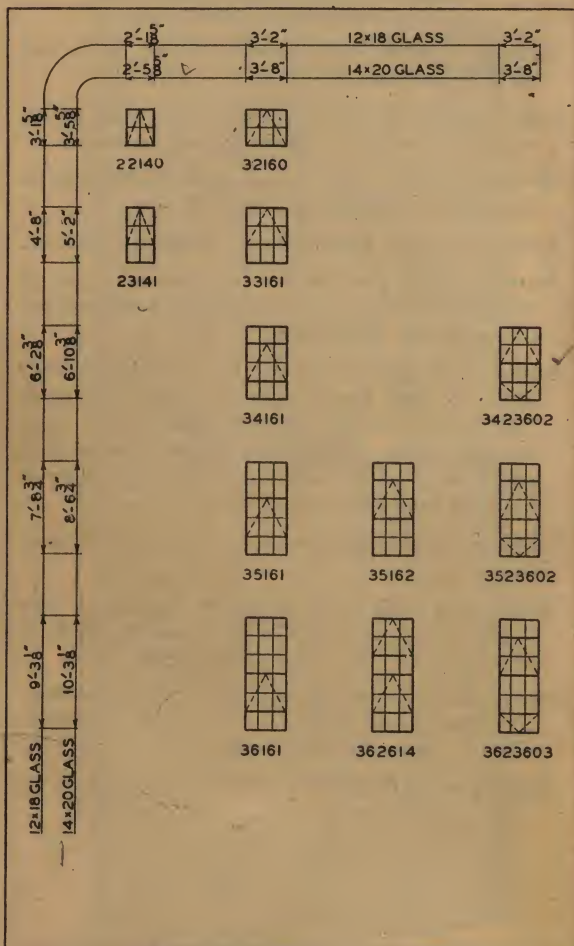
**Mullions are furnished without Covers unless specified.**

**Width and Height of Window Openings. See Table of Symmetrical Combinations on Page 14. See Pages 10 and 11 for Single Units.**

**Dimensions shown are wall openings and not overall dimensions of Window. For overall dimensions add 1" to both width and height.**

**Screens can be furnished with Windows. See Page 24.**

## PROJECTED WINDOWS



# FEDERAL

## PROJECTED WINDOWS

4'-2 $\frac{3}{4}$ "	4'-2 $\frac{3}{4}$ "	5'-2 $\frac{3}{4}$ "	12x18 GLASS	5'-2 $\frac{3}{4}$ "
4'-10 $\frac{3}{8}$ "	4'-10 $\frac{3}{8}$ "	6'-0 $\frac{3}{4}$ "	14x20 GLASS	6'-0 $\frac{3}{4}$ "



42140



52160



43141



53161



44141



4422402



54161



5423602



45141



4522402



55161



55162



5523602



46141



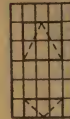
4622403



56161



562614



5623603



# FEDERAL

## PROJECTED WINDOWS

### LIST PRICES

12 x 18			14 x 20	
Area	List	Window	List	Area
7	\$14.00	22140	\$15.00	9
10	15.00	23141	16.00	13
10	16.00	32160	17.00	13
15	17.00	33161	18.00	19
20	19.00	34161	20.00	25
20	29.00	3423602	31.00	25
25	20.00	35161	22.00	31
25	20.00	35162	22.00	31
25	31.00	3523602	32.00	31
29	22.00	36161	23.00	38
29	32.00	3623603	34.00	38
29	35.00	362614	38.00	38
13	16.00	42140	17.00	17
20	18.00	43141	19.00	25
26	20.00	44141	21.00	33
26	30.00	4422402	31.00	33
33	22.00	45141	23.00	42
33	32.00	4522402	33.00	42
39	24.00	46141	25.00	50
39	34.00	4622403	36.00	50
16	18.00	52160	19.00	21
24	20.00	53161	21.00	31
32	22.00	54161	24.00	42
32	33.00	5423602	35.00	42
40	25.00	55161	27.00	52
40	25.00	55162	27.00	52
40	35.00	5523602	37.00	52
48	27.00	56161	29.00	62
48	37.00	5623603	40.00	62
48	41.00	562614	43.00	62

**IMPORTANT NOTE:** When ordering, be sure to specify whether Ventilators swing in, or out, otherwise standard swing will be furnished as described on Page 9, under "Standard Projected Ventilators."

**Heavy face types — Stock.**

**Light face types — Non-Stock.**

**Prices are subject to change without notice.**



# FEDERAL

## PROJECTED WINDOWS

### LIST PRICES

Area	12x18			14x20		
	With Covers	Without Covers	Mul- lions	Without Covers	With Covers	Area
.5	\$2.00	\$1.00	2 Light	\$1.50	\$3.00	.6
.8	3.00	1.50	3 Light	2.00	4.00	.9
1.0	4.00	2.00	4 Light	2.50	5.00	1.1
1.3	5.00	2.50	5 Light	3.00	6.00	1.4
1.5	6.00	3.00	6 Light	3.50	7.00	1.7

### HARDWARE EXTRAS

Bronze hardware, per Vent .....	\$3.00
Pole hook and 8 foot pole.....	6.00
Window cleaner anchors, per Window unit.....	2.50

#### Provision for shade brackets:

When Windows must be provided with open or tapped holes, to receive shade brackets which must be furnished by others, add as follows:

(a) Open drilled holes, per Window unit.....	.50
(b) Tapped holes, per Window unit.....	.75
(c) Shade bracket clips, includes Provision	
(a) or (b), per pair.....	1.25

Heavy face types — Stock.

Light face types — Non-Stock.

Prices are subject to change without notice.

# FEDERAL

## TABLE OF SYMMETRICAL COMBINATIONS

12 x 18	Lights High	14 x 20	Number of Lights in Width of Opening	Number of Units to Fill Opening	Number of Lights Wide in Each Unit
3'-1 $\frac{1}{8}$ "	2	3'-5 $\frac{1}{8}$ "			
4'-8"	3	5'-2"			
6'-2 $\frac{3}{4}$ "	4	6'-10 $\frac{3}{8}$ "			
7'-8 $\frac{3}{4}$ "	5	8'-6 $\frac{3}{4}$ "			
9'-3 $\frac{1}{4}$ "	6	10'-3 $\frac{1}{4}$ "			
Width of Opening					
12 x 18		14 x 20			
2'- 1 $\frac{1}{8}$ "		2'- 5 $\frac{1}{8}$ "	2	1	2
3'- 2"		3'- 8"	3	1	3
4'- 2 $\frac{3}{4}$ "		4'-10 $\frac{3}{8}$ "	4	1	4
5'- 2 $\frac{3}{4}$ "		6'- 0 $\frac{3}{4}$ "	5	1	5
6'- 6"		7'- 6"	6	2	3, 3
8'- 6 $\frac{3}{4}$ "		9'-10 $\frac{3}{4}$ "	8	2	4, 4
9'-10"		11'- 4"	9	3	3, 3, 3
10'- 7 $\frac{1}{2}$ "		12'- 3 $\frac{1}{2}$ "	10	2	5, 5
10'-10 $\frac{3}{4}$ "		12'- 6 $\frac{3}{4}$ "	10	3	3, 4, 3
11'-10 $\frac{3}{4}$ "		13'- 8 $\frac{3}{4}$ "	11	3	3, 5, 3
11'-10 $\frac{3}{4}$ "		13'- 8 $\frac{3}{4}$ "	11	3	4, 3, 4
12'-11 $\frac{1}{4}$ "		14'-11 $\frac{1}{4}$ "	12	3	4, 4, 4
13'- 2"		15'- 2"	12	4	3, 3, 3, 3
13'-11 $\frac{1}{2}$ "		16'- 1 $\frac{1}{2}$ "	13	3	4, 5, 4
13'-11 $\frac{1}{2}$ "		16'- 1 $\frac{1}{2}$ "	13	3	5, 3, 5
14'-11 $\frac{1}{8}$ "		17'- 3 $\frac{1}{8}$ "	14	3	5, 4, 5
15'- 2 $\frac{3}{4}$ "		17'- 6 $\frac{3}{4}$ "	14	4	3, 4, 4, 3
16'- 0 $\frac{1}{4}$ "		18'- 6 $\frac{1}{4}$ "	15	3	5, 5, 5
16'- 6"		19'- 0"	15	5	3, 3, 3, 3, 3
17'- 3 $\frac{1}{2}$ "		19'-11 $\frac{1}{2}$ "	16	4	4, 4, 4, 4
17'- 3 $\frac{1}{2}$ "		19'-11 $\frac{1}{2}$ "	16	4	3, 5, 5, 3
17'- 6 $\frac{3}{4}$ "		20'- 2 $\frac{3}{4}$ "	16	5	3, 3, 4, 3, 3
18'- 6 $\frac{3}{4}$ "		21'- 4 $\frac{3}{4}$ "	17	5	3, 4, 3, 4, 3
19'- 4 $\frac{1}{4}$ "		22'- 4 $\frac{1}{4}$ "	18	4	4, 5, 5, 4
19'- 7 $\frac{1}{4}$ "		22'- 7 $\frac{1}{4}$ "	18	5	3, 4, 4, 4, 3
20'- 7 $\frac{1}{2}$ "		23'- 9 $\frac{1}{2}$ "	19	5	3, 5, 3, 5, 3
21'- 5"		24'- 9"	20	4	5, 5, 5, 5
21'- 7 $\frac{1}{4}$ "		24'-11 $\frac{1}{4}$ "	20	5	4, 4, 4, 4, 4
21'-10 $\frac{1}{4}$ "		25'- 2 $\frac{1}{4}$ "	20	6	3, 3, 4, 4, 3, 3

To compute width of Opening for any desired combination of Units add together the widths of the Units plus 2" for each Mullion.

# FEDERAL

## GLASS SIZES

3'-6"  
4'-1"  
7'-7"

3'-6"  
2'-9"  
6'-3"

$\frac{12}{18}$	$\frac{12}{18}$	$\frac{12}{18}$	$\frac{12}{18}$	$\frac{12}{18}$
$\frac{12}{18}$	$\frac{11}{17}$	$\frac{12}{17}$	$\frac{11}{17}$	$\frac{12}{18}$
$\frac{12}{18}$	$\frac{11}{17}$	$\frac{12}{17}$	$\frac{11}{17}$	$\frac{12}{18}$
$\frac{12}{18}$	$\frac{12}{18}$	$\frac{12}{18}$	$\frac{12}{18}$	$\frac{12}{18}$

54161

PIVOTED AND  
COMMERCIAL PROJECTED

$\frac{14}{20}$	$\frac{14}{20}$	$\frac{14}{20}$	$\frac{14}{20}$	$\frac{14}{20}$
$\frac{14}{20}$	$\frac{13}{19}$	$\frac{14}{19}$	$\frac{13}{19}$	$\frac{14}{20}$
$\frac{14}{20}$	$\frac{13}{19}$	$\frac{14}{19}$	$\frac{13}{19}$	$\frac{14}{20}$
$\frac{14}{20}$	$\frac{14}{20}$	$\frac{14}{20}$	$\frac{14}{20}$	$\frac{14}{20}$

54161

SIZES SHOWN ARE ACTUAL CUT SIZE OF PANE

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# FEDERAL

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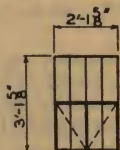
## SECURITY WINDOWS



64-1-12-1

# FEDERAL

## SECURITY WINDOWS



42-1-4-0



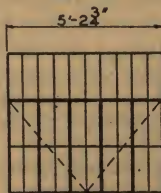
62-1-6-0



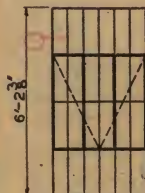
63-1-12-0



83-1-16-0



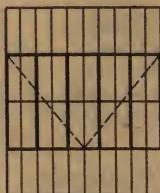
10-3-1-20-0



64-1-12-1



84-1-16-1



10-4-1-20-1



# FEDERAL

## SECURITY WINDOWS

Glazed on inside face with spring wire clips and putty.

Glass sizes in the Frame are 5 $\frac{1}{2}$ "x18" and in the Ventilator 12"x18".

Ventilators are hinged at the bottom on Bronze Pin Hinges, and open in from the top to a maximum of 30°. Steel stay arms control opening of Ventilator. Vents can be made to project in at top if so specified, at no extra cost.

Ventilators are set back of the face of the Window. Glass is not placed in fixed portion of Window in front of Ventilators.

Spring Catch at head of Ventilator.

Mullions are furnished with or without Covers.

Width and Height of Window openings. See Table of Symmetrical Combinations on Page 14, using 12"x18" glass size and one half the number of lights in width.

Dimensions shown are wall openings and not overall dimensions of Window. For overall dimensions add 1" to both width and height.

Screens can be furnished with Windows. See Page 24. See Page 17 for Window diagrams.

### LIST PRICES

Window	List	Window	List
42-1-4-0	\$19.00	83-1-16-0	\$30.50
62-1-6-0	21.50	84-1-16-1	34.00
63-1-12-0	26.50	10-3-1-20-0	35.00
64-1-12-1	29.50	10-4-1-20-1	40.00

### MULLIONS

Number of Lights High	Without Covers	With Covers
2	\$1.00	\$2.00
3	1.50	3.00
4	2.00	4.00

### HARDWARE EXTRAS

Bronze Hardware, per vent.....	\$1.50
Pole Hook and 8 ft. Pole.....	6.00

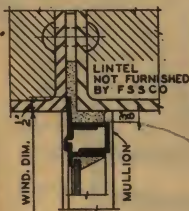
All types — Non Stock.

Prices are subject to change without notice.

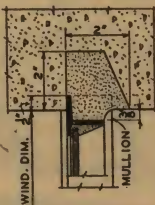


# FEDERAL

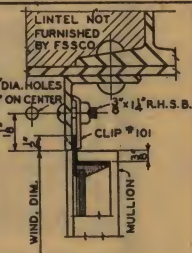
## INDUSTRIAL WINDOW INSTALLATION DETAILS



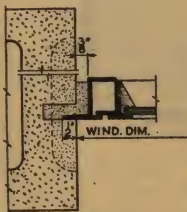
HEAD  
STEEL LINTEL



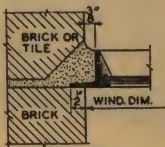
HEAD AND JAMB  
CONCRETE



HEAD  
STEEL LINTEL



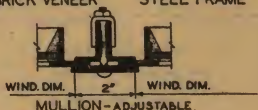
JAMB  
CEMENT BLOCK  
SPECIAL GROVED OR STANDARD



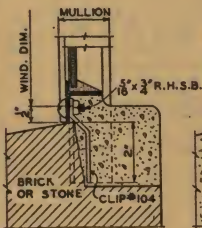
JAMB  
BRICK OR BRICK VENEER



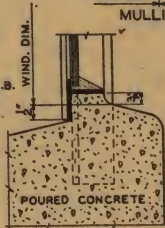
JAMB  
STEEL FRAME



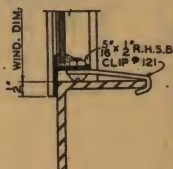
MULLION-ADJUSTABLE



SILL  
BRICK OR STONE SILL



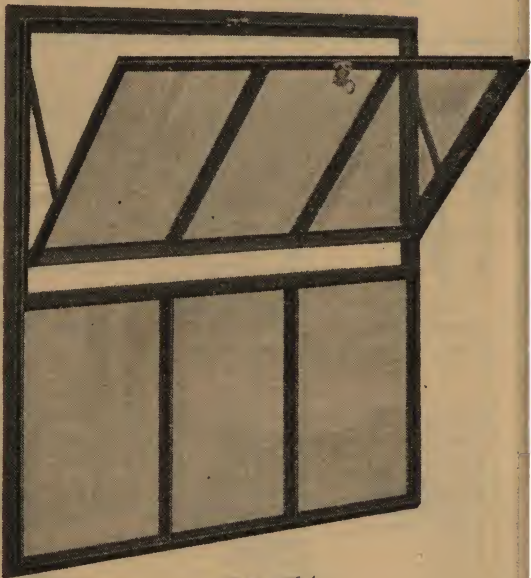
SILL  
CONCRETE



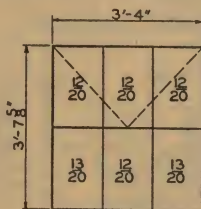
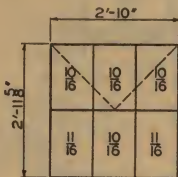
STEEL GIRT

# FEDERAL

## UTILITY WINDOW



32131



# FEDERAL

## UTILITY WINDOWS

Glazed on inside face with spring wire clips and putty.

Only two sizes of Utility Window are made.

**Ventilator** is projected type, located in the upper half of the Window and opens from the head in and from the sill up.

**Double Contact Weathering** at head, jamb and sill of Ventilator.

**Spring Catch** at head of Ventilator.

**Utility Windows** can be combined for openings larger than one Unit by using **Federal Adjustable Mullions**. To compute dimension of openings using more than one Window, add together the dimensions for the number of Windows used plus 2" for each Mullion.

**Screens** can be furnished with Windows. See Page 24.

### LIST PRICES

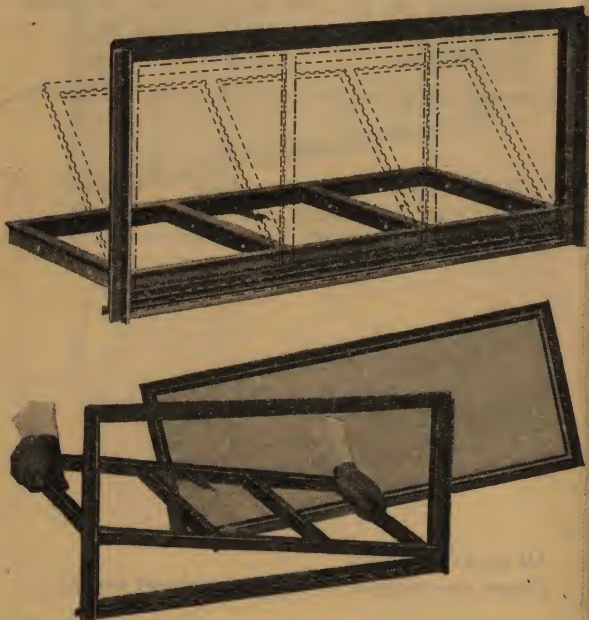
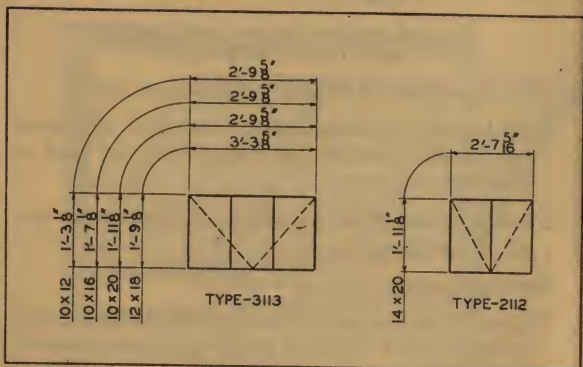
Glass Size	Type	List	Mullion
10' x 16'	32131	\$10.50	\$1.50
12' x 20'	32131	12.00	1.50

All types — Stock.

Prices are subject to change without notice.

# FEDERAL

## BASEMENT WINDOWS



# FEDERAL

## BASEMENT WINDOWS

Glazed on inside face with spring wire clips and putty.

Basement Windows are made in sizes listed only and with Ventilators as shown. No other sizes or Ventilator arrangements can be furnished.

Ventilators open from the head in and automatically stop at 45° and 90° opening. They are removable and interchangeable.

Cam Handle Lock at center of Ventilator head locks Window when closed.

Channel Sill permits setting Window in opening without bracing.

Guide Angles on jambs align wall and also hold Screen.

Screens can be furnished with Windows. See Page 24.

### LIST PRICES

Glass Size	Type	List	Mullion
10 x 12	3113	\$5.20	\$1.00
10 x 16	3113	5.45	1.00
10 x 20	3113	5.70	1.00
12 x 18	3113	5.70	1.00
14 x 20	2112	5.35	1.00

All types — Stock.

Prices are subject to change without notice.



# **FEDERAL**

## **SCREENS**

**COMMERCIAL PROJECTED AND SECURITY WINDOW SCREENS** are rewireable, copper cloth, solid frame Screens designed especially for **FEDERAL ELECTRIC ARC WELDED WINDOWS**.

**Frames** are solid section drawn steel, electric welded at corners.

**Clips, Corner Boxes, Baffles and Boxes** are sheet steel and furnished as required for attaching.

**Screen Cloth** is 16 mesh copper wire.

**Holes for attaching Screens** are provided in Windows only when order for Screens accompanies order for Windows to which Screens attach.

**Screens** are given one coat of black enamel at Factory.

**BASEMENT and UTILITY WINDOW SCREENS** are rewireable, with copper cloth and formed metal frames, welded at corners.

**Screen Cloth** is 16 mesh copper.

**Holes for Attaching Screws** are provided in all Basement and Utility Windows.

**Screens** are given one coat of oxide paint at Factory.

**FOR CASEMENT WINDOW SCREENS SEE CASEMENT WINDOWS, PAGE 37.**



# FEDERAL

## SCREENS

### LIST PRICES

#### COMMERCIAL PROJECTED WINDOWS

Swing of Ventilator	Number of Vent Lights			
	2	3	4	6
Project In	\$6.65	\$8.20	\$9.00	\$11.20
Project Out	9.50	10.90	11.60	13.60

#### SECURITY WINDOWS

*Size of Ventilator	4	6	12	16	20
Screen Price	\$5.50	6.00	8.00	9.00	10.00

\*Size of ventilator is determined from number of lights it covers in the main frame; thus, a security window type 63-1-12-0 has a 12 light ventilator.

#### UTILITY WINDOWS

Screen Price, both sizes	\$4.00
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#### BASEMENT WINDOWS

Screen Price, all sizes	\$4.00
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<b>Crating Charge</b> —For Commercial Projected and Security Window Screens, totaling less than 16, ADD, per Order.....		6.00
For Utility and Basement Window Screens, totaling less than 6, ADD, per Order.....		1.50

Heavy face types — Stock.

Light face types — Non-Stock.

Prices are subject to change without notice.

# **FEDERAL**

## **DOORS**



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# FEDERAL

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## INDUSTRIAL DOORS SWING AND SLIDE

### MATERIALS

**Door Stiles and Rails** are 14 gauge maximum mild open hearth steel, drawn or rolled to shape.

**Window panels** are standard Pivoted Windows for inside glazing with glazing angles. Solid panels are 14 gauge maximum sheets.

**All joints and connections** are electric arc welded.

Will not rack or sag out of shape.

Are square and true to dimension.

All surfaces accessible for easy painting.

Doors are shipped ready for hardware installation.

Hardware is boxed or bundled and shipped separately.

**Frames for Swing Doors** are formed of 14 gauge maximum steel, provided with stops and anchors.

**Swing Door hardware** may be either a Cylinder Lock, a Bit Key Lock, or a Lever Latch (barn door type, without padlock), and a Hook Back and Ring. Top and bottom bolts are included on double Swing Doors for the inactive leaf. Hinges are included for Door leaves.

**Slide Door hardware** consists of complete Track Equipment, Hasp and Staple, Hangers, Floor Guides and Door Stops.

**Dimensions** are clear opening of Door and are not actual leaf measurements.

Doors are given one coat of oxide paint at Factory.

Orders for swing type Doors must state whether single Swing Doors have hinges on left or right side and swing in or out, all assuming a position outside the Door and facing it—orders for double Swing Doors must state whether leaves swing in or out, and whenever possible submit sketch.

Orders for single Slide Doors must state whether Doors slide left or right as viewed from outside.

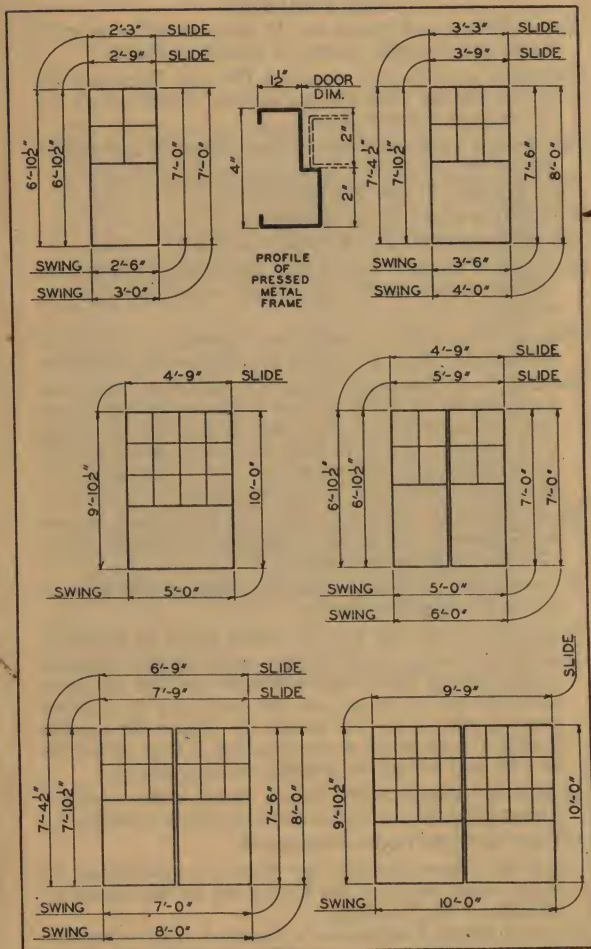
All double Slide Doors slide apart.

On Slide Doors indicate by sketch construction of lintel—also whether the Doors are on the inside or outside of the building.

**Specify what hardware is wanted and whether iron or bronze.**

# FEDERAL

## DOORS



# FEDERAL

## DOORS

### LIST PRICES

Size	Type	Door	Frame
2' 6" x 7' 0"	Single Swing	\$35.00	\$13.80
3' 0" x 7' 0"		37.00	14.10
3' 6" x 7' 6"		42.00	14.70
4' 0" x 8' 0"		46.00	15.40
5' 0" x 10' 0"		58.00	18.50
5' 0" x 7' 0"	Double Swing	83.00	17.40
6' 0" x 7' 0"		87.00	17.90
7' 0" x 7' 6"		97.00	18.90
8' 0" x 8' 0"		105.00	19.90
10' 0" x 10' 0"		135.00	23.50
2' 3" x 6' 10 $\frac{1}{2}$ "	Single Slide	58.00	
2' 9" x 6' 10 $\frac{1}{2}$ "		60.00	
3' 3" x 7' 4 $\frac{1}{2}$ "		69.00	
3' 9" x 7' 10 $\frac{1}{2}$ "		72.00	
4' 9" x 9' 10 $\frac{1}{2}$ "		89.00	
4' 9" x 6' 10 $\frac{1}{2}$ "	Double Slide	120.00	
5' 9" x 6' 10 $\frac{1}{2}$ "		127.00	
6' 9" x 7' 4 $\frac{1}{2}$ "		142.00	
7' 9" x 7' 10 $\frac{1}{2}$ "		151.00	
9' 9" x 9' 10 $\frac{1}{2}$ "		186.00	

### HARDWARE EXTRAS

Cylinder Lock with Iron Handles, for Swing Doors.....	\$36.00
Cylinder Lock with Bronze Handles, for Swing Doors.....	40.00
Lever Latch for Swing Doors, without padlock.....	4.00
Bit Key Lock for Swing Doors	
With steel plated knobs and escutcheons..	18.50
With wrought bronze knobs and escutcheons.....	21.50
Hook Back and Ring for Swing Doors, per leaf.....	1.50

All types — Non-Stock.

Prices are subject to change without notice.



# FEDERAL

## INSTALLATION

**Proper Installation of Windows and Doors** presents no difficulties, but does require ordinary intelligence and care, and must be done in a workmanlike manner. Improperly installed units will do more than anything else to discredit a product, and **Sales Representatives**, in their own interest, should be sure that products sold by them are installed in a first class, workmanlike manner.

### **Windows**

**Pivoted, Commercial Projected, Security, Basement and Utility Windows.** In installing these types of Windows the following points must be observed. Each Unit must be inspected before installation, to be sure it has not been damaged in transit. Bent or distorted members must be straightened. Units, when set in place, must be level horizontally and plumb vertically.

**Clearances must be allowed.** Steel Windows are not designed to act as lintels or to carry the load of the wall above the Window opening. Unless ample clearance is allowed at the head, settlement of the walls or deflection of the lintel may throw this load on the Window, causing it to bow, ventilators to bind and glass to break. (See Plate, Page 19, "Installation Details," for standard clearance.) Where Ventilators come at the Head, Jambs or Sill, particular care must be taken to allow clearances so that Ventilators will operate freely. Horizontal Muntins in combined units must be in line. Mullion Bolts must be drawn up tight.

**Ventilators must be tested individually to make sure they operate properly and that weathering surfaces are in continuous contact.** All Ventilators are adjusted, weathered and wired in place at the factory, before shipment, but this does not prevent their getting out of adjustment in transit. Wires holding Ventilators, must not be cut until units have been set permanently in place.

**Ventilator Hardware.** Push Bar and Cam Latch, except bronze, are attached, locked, blocked and wired in place before shipment from the Factory.

# FEDERAL

## INSTALLATION

They require no adjustment in the field unless damaged in transit. **Spring Catches, Chains and Chain Clips** are packed in boxes and shipped separately. Spring Catches must be adjusted after attaching so they operate properly. **Bronze Hardware** is boxed and shipped separately. Hardware must be attached and adjusted in the field to lock when Ventilator closes. **Clips** for fastening units to steel framed structures and **Wall and Sill Anchors** are packed in boxes, with the necessary bolts and nuts. Care must be taken that clips, when in place, are drawn up tight. (See Plate, Page 19, "Installation Details.")

**Mason Work.** Window openings in **Masonry, Brick, Tile or Concrete Block** walls must be true to dimensions and shape. Reveals to take Windows are prepared before units are placed in the opening. Openings not properly prepared or true to dimensions and shape should be made so before units are installed.

**Poured Concrete Wall Openings** must have reveals provided in the concrete forms. (See Plate, Page 19, "Installation Details.") Units are placed in the Window openings after the form work is removed, when they are installed as for mason work.

**Do not attempt to force or spring Windows into improper openings** to overcome poor work on the part of other contractors. **Crow Bars, Hammers or Prys are not necessary** to install Windows in properly prepared openings and **should not be used.**

**Window Openings for single units** should have the sidewall run up about one third ( $\frac{1}{3}$ ) the height of the opening before setting the Window. The unit is placed in position from the top, **leveled, plumbed** and securely held in place, the wall continued up, and the reveals grouted. (See Plate, Page 19, "Installation Details").

**Window Openings for units combined by Mullions** are completed before the units are installed. Units are placed in the openings and loosely connected up by the Mullions. They are then **plumbed, leveled and lined up,**

# FEDERAL

## INSTALLATION

**blocked securely in position, the Mullions are set and bolts tightened.**

**Steel Frame** structures have holes punched in the structural members by the fabricating shop, to take clips which attach the Window. (See Plate, Page 19, "Installation Details.") It is not part of the Window installation work to put holes in the structural frame. Steel frame structures are presumed to be erected plumb and square. If not so, the Window erector should call attention to the fact, and **should not attempt to force or spring the Window to overcome poor workmanship on the part of the steel erector.**

**Sills** are commonly poured concrete, precast concrete or stone. Poured concrete sills are poured after the Window is permanently in place. Precast and stone sills may be placed either before or after the Window is set. Care must be taken to see that the Window rests flush on the sill, and that no openings are left in which water can collect.

Where **Mullions and sill anchors** are used, they **must be firmly imbedded in the mason work.** (See Plate, Page 19, "Installation Details.")

### Doors

**Swing and Slide Doors, Frames and Guides,** must be inspected before installation to be sure they have not been damaged or sprung in transit and are free from wind or twist.

**Frames must be erected square and plumb and proper width maintained at both head and sill of frame,** otherwise Doors will not hang true and weather properly. Doors must be set plumb and level. **Proper clearances must be maintained between Doors and Frame.** Hangers and tracks must be adjusted to allow for proper clearances, both between Door and wall and at sill.

**Locks** and other hardware are fitted to Door at Factory, removed and boxed with other hardware before shipment. Tracks, trolleys and hangers are boxed and shipped separately.

### Screens

**Screens** are crated and shipped separately. Installation diagrams are furnished with each shipment.

# FEDERAL

## GLASS AND GLAZING

Glass used in Windows and Doors is of different kinds, varying with the purpose for which it is used.

Pivoted, Commercial Projected, Security, Utility and Basement Windows are usually glazed with  $\frac{1}{8}$ " glass of the following varieties:

- Clear Double Strength Grade A "DSA"
- Clear Double Strength Grade B "DSB"
- Clear Double Strength Steel Sash Quality
- Ribbed
- Hammered
- Rough
- Prismatic

Doors are glazed with  $\frac{1}{4}$ " wire glass.

Glass sizes for different types of Windows are shown on Pages 15, 20 and 22. Glass must be cut rectangular and to correct dimension.  $\frac{1}{8}$ " clearance is allowed all around each pane. Glass sizes for Doors are furnished for each shipment.

Breakage allowances must be made in ordering glass, to cover damage in transit and in handling, as follows:

DSA, DSB and Steel Sash Quality

Clear Glass.....4%

$\frac{1}{8}$ " Ribbed, Hammered, Rough or Prismatic Glass.....3%

$\frac{1}{4}$ " Wire Glass.....2%

Glass cut to fit in field.....5%

Putty must be Steel Window Litharge or Standard Glaziers Putty. Ordinary Commercial Putty must not be used.

Spring Wire Glazing Clips or Angles are furnished with all units. Clips are shipped separately in boxes. Angles are bolted to and shipped with Window Panels in Doors, except where a considerable number of Doors are included in one shipment, in which case Angles are boxed and shipped separately.



# FEDERAL

## GLASS AND GLAZING

**In Glazing** a layer of back putty is laid around the glazing rabbet to form a bed for the glass. Panes are then pressed into the back putty, and firmly bedded. Where **Clips** are used, they are sprung into the holes provided for them, and the face putty is laid on. Where **Angles** are used, they are pressed into the putty until the bolt or screws holding the Angle to the Door member can be put in place.

**Putty** on both face and back must be struck off, and the glass left with a neat and workmanlike appearance. Putty stains on the glass must be avoided.

**Square Feet of Glass Required**, should be estimated as follows:

12 x 18 lights.....	1½ sq. ft.
14 x 20 lights.....	2 sq. ft.
Figure Ventilator lights same as fixed.	

**Shipping Weights**, including packing and crating.

$\frac{1}{8}$ ".....	2¼ lbs. per sq. ft.
$\frac{1}{4}$ ".....	4½ lbs. per sq. ft.

### Putty Required

Weights given are approximate, and include sufficient Putty for first class glazing. They can be used to compute freight and cartage charges.

### Pivoted and Commercial Projected Windows,

12 x 18 glass.....	14 oz. per light
14 x 20 glass.....	1 lb. per light

### Security Windows

$5\frac{7}{8}$ x 18 glass.....	10 oz. per light
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<b>Doors</b> .....	8 oz. per light
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### Basement Windows

10 x 12.....	10 oz. per light
12 x 18.....	14 oz. per light
10 x 16.....	12 oz. per light
10 x 20.....	14 oz. per light
14 x 20.....	1 lb. per light

### Utility Windows

10 x 16.....	12 oz. per light
12 x 20.....	14 oz. per light



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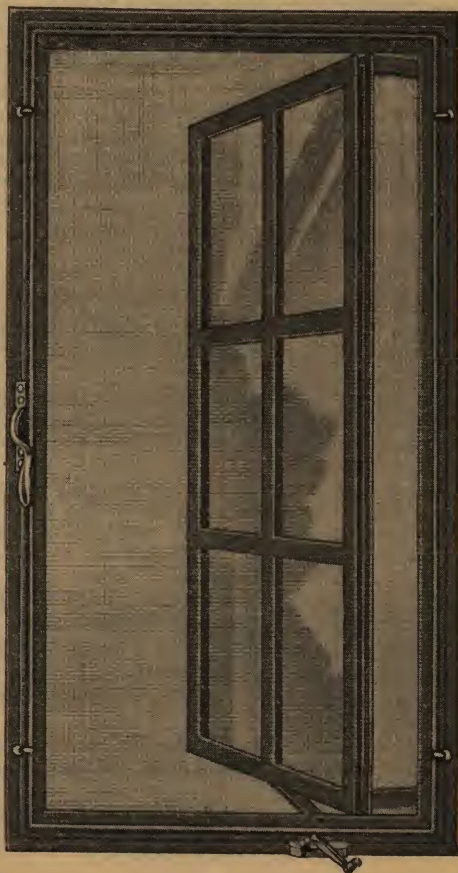
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## LIGHT CASEMENTS



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# FEDERAL

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## LIGHT CASEMENTS GENERAL INFORMATION

### SIZES AND TYPES

Casements are made to the standard sizes of the Metal Window Institute.

Casements are viewed from outside.

Casement Vents are side hung to open out. Transom vents open out at bottom. Tilt-in Vents open in at top and are designed for use with open-out casements only.

Casements are glazed on outside face with spring wire clips and putty.

### MATERIAL AND CONSTRUCTION

Casements are manufactured of solid rolled mild steel sections. Corners are mitred, electrically welded and ground smooth.

Muntins are  $\frac{3}{4}$ " tee section, providing adequate glass rebate and putty surface. Are continuous from head to sill and from jamb to jamb and securely riveted to frame.

Hinges are projected type to permit easy cleaning from inside. Each hinge leaf is of the improved angle type, welded solid to casement or frame. Bronze hinge pins,  $\frac{3}{8}$ " x 2", are of exceptional length to take bearing strains.

Double weathering contact is provided on all Ventilators without use of loose or applied linings.

All Casements are provided with open drilled holes to receive shade bracket hardware.

Spring wire copper coated glazing clips are supplied with all Casements.

All steel is cleaned free from rust and scale and primed one coat special DuPont's rust resisting primer, baked on.

Sufficient mastic cement is included for bedding and pointing. (1 lb. per 7' of frame.)

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# FEDERAL

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## LIGHT CASEMENTS

Order by type numbers shown on pages 39-41 inclusive and state handing of single vented units. Handing is determined by viewing the Casement from the outside, i.e., when the hinges occur on the left hand side, order a L.H. Casement.

Casements setting direct to masonry should have continuous angle fins at head and jambs for proper anchorage and weather break between the Casement frame and masonry—furnished at an increased list price.

## STANDARD FITTINGS

**Non Screen type Casements** are hung on cleaning friction hinges and fitted with bronzed die cast locking handle.

Double bar sliding sill adjusters, when required, are supplied at an increased list price.

**Screen type Casements** are fitted with bronzed die cast fastener and rotary adjuster. Quadrant adjusters can be supplied without extra charge if preferred.

Solid bronze hardware (screen or non-screen type), is carried in stock and is supplied at an increased list price.

## SCREENS

Screens are manufactured of .0375" steel. Frame corners are electrically welded, ground smooth, galvanized and primed one coat gray paint, baked on; cloth is 16 mesh bronze held in place with  $\frac{3}{16}$ " solid steel spline. Screen type Casements are prepared for attaching of Screens.

## CASEMENT DOORS

Made to standard size, 3' 8" x 6' 10 $\frac{1}{4}$ " constructed of intermediate casement sections, are also kept in stock.

## WOOD SURROUNDS

Made of California Redwood, kiln dried. Shipped in cartons with screws and sufficient mastic cement, ready for application by carpenter contractor, or shipped attached to Casement.

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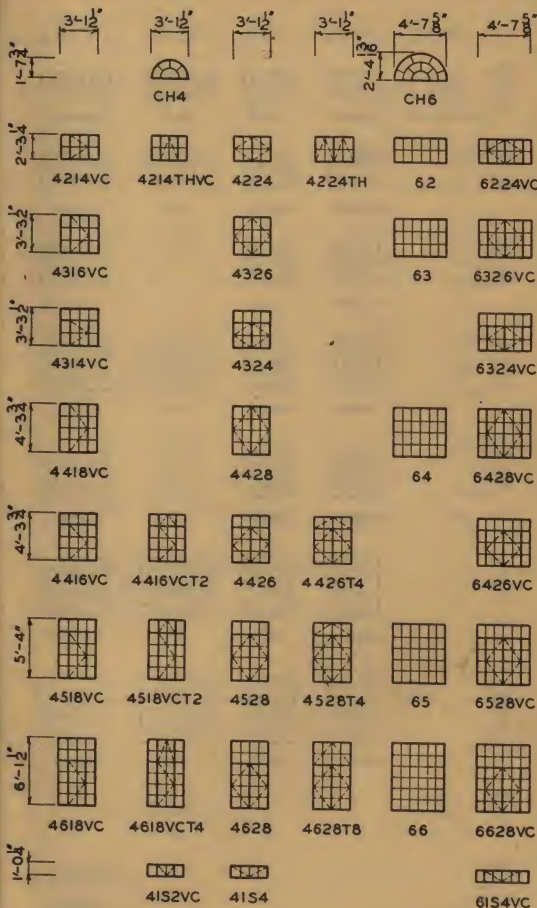
## LIGHT CASEMENTS

<div><div>7 1/2"</div><div>CH-1</div></div>										<div><div>1'-1 1/8"</div><div></div></div>	<div><div>1'-1 1/8"</div><div></div></div>	<div><div>1'-1 1/8"</div><div></div></div>	<div><div>1'-7 1/4"</div><div></div></div>	<div><div>1'-7 1/4"</div><div></div></div>	<div><div>1'-7 1/4"</div><div></div></div>	<div><div>1'-7 1/4"</div><div></div></div>	<div><div>2'-1"</div><div></div></div>	<div><div>3'-1 1/2"</div><div></div></div>
<div><div>9"</div><div>CH-2</div></div>																		
<div><div>2'-3 1/4"</div><div></div></div>	<div><div></div><div>12</div></div>	<div><div></div><div>1212</div></div>	<div><div></div><div>22</div></div>		<div><div></div><div>2214</div></div>	<div><div></div><div>2214 TH</div></div>		<div><div></div><div>2222</div></div>	<div><div></div><div>42</div></div>									
<div><div>3'-3 1/2"</div><div></div></div>	<div><div></div><div>13</div></div>	<div><div></div><div>1313</div></div>	<div><div></div><div>23</div></div>		<div><div></div><div>2316</div></div>			<div><div></div><div>2323</div></div>	<div><div></div><div>43</div></div>									
<div><div>3'-3 1/2"</div><div></div></div>	<div><div></div><div>13T</div></div>		<div><div></div><div>1312</div></div>	<div><div></div><div>23T</div></div>	<div><div></div><div>2314</div></div>													
<div><div>4'-3 3/4"</div><div></div></div>	<div><div></div><div>14</div></div>	<div><div></div><div>1414</div></div>	<div><div></div><div>24</div></div>		<div><div></div><div>2418</div></div>			<div><div></div><div>2424</div></div>	<div><div></div><div>44</div></div>									
<div><div>4'-3 3/4"</div><div></div></div>	<div><div></div><div>14T</div></div>		<div><div></div><div>1413</div></div>	<div><div></div><div>24T</div></div>	<div><div></div><div>2416</div></div>	<div><div></div><div>2416T2</div></div>												
<div><div>5'-4"</div><div></div></div>	<div><div></div><div>15</div></div>	<div><div></div><div>15T</div></div>	<div><div></div><div>1514</div></div>	<div><div></div><div>25</div></div>	<div><div></div><div>25T</div></div>	<div><div></div><div>2518</div></div>	<div><div></div><div>2518T2</div></div>	<div><div></div><div>45</div></div>										
<div><div>6'-1 1/2"</div><div></div></div>	<div><div></div><div>16</div></div>	<div><div></div><div>16T</div></div>	<div><div></div><div>1614</div></div>	<div><div></div><div>26</div></div>	<div><div></div><div>26T</div></div>	<div><div></div><div>2618</div></div>	<div><div></div><div>2618T4</div></div>	<div><div></div><div>46</div></div>										
<div><div>1'-0 1/4"</div><div></div></div>	<div><div></div><div>11</div></div>	<div><div></div><div>21</div></div>			<div><div></div><div>41</div></div>													
<div><div>21S2</div><div>21</div></div>																		
<div>21S2</div>										<div>DIMENSIONS SHOWN ARE OUT TO OUT OF WINDOW.</div>								

DIMENSIONS SHOWN  
ARE OUT TO OUT OF WINDOW.

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## LIGHT CASEMENTS

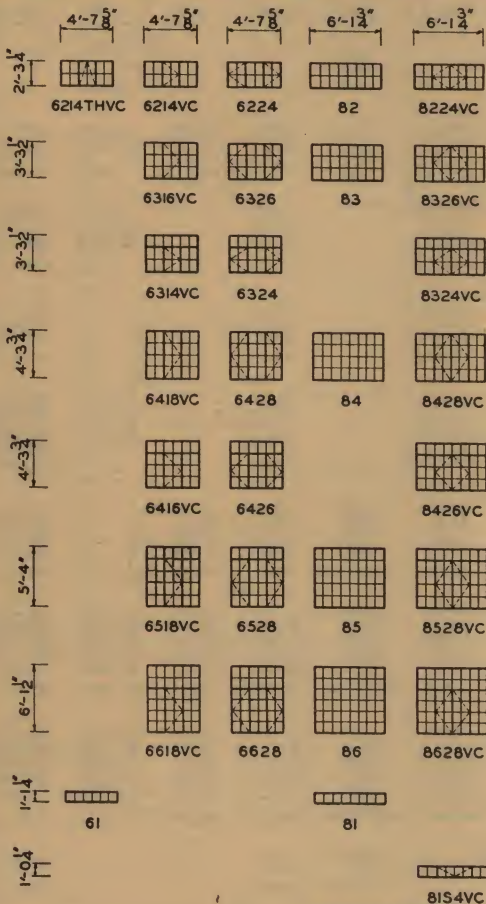


DIMENSIONS SHOWN  
ARE OUT TO OUT OF WINDOW.



# FEDERAL

## LIGHT CASEMENTS



DIMENSIONS SHOWN  
ARE OUT TO OUT OF WINDOW.

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## LIGHT CASEMENTS HORIZONTAL MUNTIN TYPE



HM-2214



HM-4214



HM-4224



HM-6224



HM-6214VC



HM-2314



HM-4314



HM-4324



HM-6324



HM-6314VC



HM-2416



HM-4416



HM-4426



HM-6426



HM-6416VC



HM-2518



HM-4518



HM-4528



HM-6528



HM-6518VC

HM = HORIZONTAL MUNTIN TYPES

VC = VENT CENTER

ALL VENTILATORS OPEN OUTWARD

DIMENSIONS SHOWN  
ARE OUT TO OUT OF WINDOW.

# FEDERAL

## LIGHT CASEMENTS—LIST PRICES

Flat Screen	Screen		Non-Screen Window	Hinged Screen	Surrounds	
	Type Window	Type			K.D.	At- tached
		11	\$2.60		\$1.40	\$1.70
		12	3.10		1.90	2.30
		13, 13T	3.60		2.40	2.90
		14, 14T	4.20		2.80	3.60
		15, 15T	4.70		3.30	4.10
		16, 16T	5.20		3.60	4.40
\$4.60	\$10.90	1212	7.40	\$4.00	1.90	2.30
4.60	11.20	1312	7.70	4.00	2.40	2.90
4.80	11.40	1313	7.90	4.30	2.40	2.90
4.80	12.00	1413	8.50	4.30	2.80	3.60
5.60	12.50	1414	9.00	4.60	2.80	3.60
5.60	13.00	1514	9.50	4.60	3.30	4.10
5.60	13.50	1614	10.00	4.60	3.60	4.40
		21	3.10		1.60	2.00
		22	3.60		2.10	2.80
		23, 23T	4.40		2.60	3.20
		24, 24T	5.30		3.00	4.00
		25, 25T	6.20		3.50	4.40
		26, 26T	6.80		3.80	4.70
4.60	12.50	2214	9.00	4.50	2.10	2.80
4.60	14.00	2214TH	9.50	5.60	2.10	2.80
4.60	12.90	2314	9.40	4.50	2.60	3.20
5.60	13.50	2316	10.00	5.00	2.60	3.20
5.60	14.00	2416	10.50	5.00	3.00	4.00
10.20	26.00	2416T2	18.00	10.60	3.00	4.00
6.30	14.60	2418	11.10	5.50	3.00	4.00
6.30	15.10	2518	11.60	5.50	3.50	4.40
10.90	27.00	2518T2	19.00	11.10	3.50	4.40
6.30	16.10	2618	12.60	5.50	3.80	4.70
10.90	29.60	2618T4	21.60	11.10	3.80	4.70
6.50	19.70	2222	14.70	9.00	2.10	2.80
8.10	21.30	2323	16.30	10.00	2.60	3.20
9.20	22.90	2424	17.90	11.00	3.00	4.00
		41	4.20		2.30	2.80
		42	4.70		2.80	3.60
		43	6.20		3.30	4.10
		44	7.80		3.70	4.90
		45	9.40		4.20	5.20
		46	10.40		4.50	5.80

Heavy face types—Stock.

Light face types—Non-Stock.

Prices are subject to change without notice.

# FEDERAL

## LIGHT CASEMENTS—LIST PRICES

Screen		Window Type	Non-Screen Window	Hinged Screen	Surrounds	
Flat Screen	Type Window				K.D.	At-tached
\$4.60	\$15.10	4214VC	\$11.60	\$4.50	\$2.80	\$3.60
4.60	17.20	4214THVC	12.70	5.60	2.80	3.60
4.60	17.20	4314VC	13.70	4.50	3.30	4.10
5.60	17.70	4316VC	14.20	5.00	3.30	4.10
5.60	18.70	4416VC	15.20	5.00	3.70	4.90
10.20	30.20	4416VCT2	22.20	10.60	3.70	4.90
6.30	19.20	4418VC	15.70	5.50	3.70	4.90
6.30	20.30	4518VC	16.80	5.50	4.20	5.20
10.90	32.20	4518VCT2	24.20	11.10	4.20	5.20
6.30	21.30	4618VC	17.80	5.50	4.50	5.80
10.90	34.30	4618VCT4	26.30	11.10	4.50	5.80
6.50	21.30	4224	16.30	9.00	2.80	3.60
9.20	27.00	4224TH	18.00	11.20	2.80	3.60
6.50	22.30	4324	17.30	9.00	3.30	4.10
8.10	22.90	4326	17.90	10.00	3.30	4.10
8.10	24.40	4426	19.40	10.00	3.70	4.90
13.20	38.00	4426T4	28.50	16.10	3.70	4.90
9.20	25.00	4428	20.00	11.00	3.70	4.90
9.20	26.00	4528	21.00	11.00	4.20	5.20
14.30	39.50	4528T4	30.00	17.10	4.20	5.20
9.20	27.60	4628	22.60	11.00	4.50	5.80
15.70	42.60	4628T8	33.10	18.50	4.50	5.80
		61	4.70		3.00	4.00
		62	5.70		3.50	4.80
		63	8.30		4.00	5.20
		64	10.90		4.40	5.90
		65	13.00		4.90	6.20
		66	15.10		5.20	6.90
4.60	20.60	6214VC	16.60	4.50	3.50	4.80
4.60	19.20	6214THVC	14.70	5.60	3.50	4.80
4.60	21.60	6314VC	17.60	4.50	4.00	5.20
5.60	23.20	6316VC	19.20	5.00	4.00	5.20
5.60	25.20	6416VC	21.20	5.00	4.40	5.90
6.30	26.80	6418VC	22.80	5.50	4.40	5.90
6.30	28.40	6518VC	24.40	5.50	4.90	6.20
6.30	29.40	6618VC	25.40	5.50	5.20	6.90
9.20	27.60	6224	20.60	9.00	3.50	4.80
9.20	28.60	6324	21.60	9.00	4.00	5.20
11.20	30.20	6326	23.20	10.00	4.00	5.20
11.20	32.20	6426	25.20	10.00	4.40	5.90
12.60	33.80	6428	26.80	11.00	4.40	5.90
12.60	35.40	6528	28.40	11.00	4.90	6.20
12.60	36.40	6628	29.40	11.00	5.20	6.90

Heavy face types—Stock.

Light face types—Non-Stock.

Prices are subject to change without notice.



# FEDERAL

## LIGHT CASEMENTS—LIST PRICES

Flat Screen	Screen		Non-Screen Window	Hinged Screen	Surrounds	
	Type Window	Type			K.D.	At- tached
\$6.50	\$23.90	6224VC	\$18.90	\$9.00	\$3.50	\$4.80
6.50	24.90	6324VC	19.90	9.00	4.00	5.20
8.10	26.50	6326VC	21.50	10.00	4.00	5.20
8.10	28.60	6426VC	23.60	10.00	4.40	5.90
9.20	30.20	6428VC	25.20	11.00	4.40	5.90
9.20	31.70	6528VC	26.70	11.00	4.90	6.20
9.20	32.80	6628VC	27.80	11.00	5.20	6.90
		81	7.80		3.60	5.30
		82	9.40		4.10	5.60
		83	13.00		4.60	6.40
		84	15.60		5.00	6.70
		85	18.20		5.50	7.30
		86	20.30		5.80	7.50
6.50	26.50	8224VC	21.50	9.00	4.10	5.60
6.50	29.70	8324VC	24.70	9.00	4.60	6.40
8.10	30.20	8326VC	25.20	10.00	4.60	6.40
8.10	33.30	8426VC	28.30	10.00	5.00	6.70
9.20	33.80	8428VC	28.80	11.00	5.00	6.70
9.20	36.90	8528VC	31.90	11.00	5.50	7.30
9.20	40.00	8628VC	35.00	11.00	5.80	7.50
		CH1	8.30		11.00	12.50
		CH2	8.80		11.60	13.00
		CH4	15.60		15.40	16.90
		CH6	20.80		19.70	21.30

Tilt-In Ventilators (Tilt in at top). For attachment direct to casements as sill ventilators without use of horizontal mullions.

\$5.90	\$ 9.90	21S2	\$ 9.90
5.90	11.40	41S2VC	11.40
6.60	12.00	41S4	12.00
6.60	14.60	61S4VC	14.60
6.60	16.60	81S4VC	16.60

T.....	Transom
TH.....	Top Hung Ventilator
CH.....	Curved Head
VC.....	Vent Center
S.....	Sill Ventilator, Tilt-in

### Muntin Variations:

All prices shown also apply to units having muntins omitted. Partial muntin omission is permissible provided the remaining muntins are in standard position. See Page 45 for lower prices of 20 types in Horizontal Muntin design.

Heavy face types—Stock.

Light face types—Non-Stock.

Prices are subject to change without notice.



# FEDERAL

## LIGHT CASEMENTS HORIZONTAL MUNTIN TYPE NON-SCREEN TYPE ONLY

Specifications given on Page 36 for light steel Casements apply except that muntins are horizontal only and only non-screen types will be furnished for side hinged Screens. See Page 41 for Window diagrams.

### LIST PRICES

Type	Win- dow	Hinged Screen	Surrounds	
			K.D.	At- tached
HM-2214	\$8.70	\$4.50	\$2.10	\$2.80
HM-2314	9.00	4.50	2.60	3.20
HM-2416	9.90	5.00	3.00	4.00
HM-2518	11.00	5.50	3.50	4.40
HM-4214	10.80	4.50	2.80	3.60
HM-4314	12.10	4.50	3.30	4.10
HM-4416	13.60	5.00	3.70	4.90
HM-4518	14.90	5.50	4.20	5.20
HM-4224	15.70	9.00	2.80	3.60
HM-4324	16.40	9.00	3.30	4.10
HM-4426	18.20	10.00	3.70	4.90
HM-4528	19.50	11.00	4.20	5.20
HM-6224	19.70	9.00	3.50	4.80
HM-6324	20.40	9.00	4.00	5.20
HM-6426	23.40	10.00	4.40	5.90
HM-6528	26.60	11.00	4.90	6.20
HM-6214VC	14.80	4.50	3.50	4.80
HM-6314VC	16.20	4.50	4.00	5.20
HM-6416VC	18.80	5.00	4.40	5.90
HM-6518VC	21.60	5.50	4.90	6.20

Casements with single Vents may be right or left hand, but must be hinged at jamb of the unit. When ordering, nomenclature should include letter "R" or "L" to indicate hand, as HM-6518-VCR or HM-6518-VCL.

### Muntin Variations:

All prices shown also apply to units having muntins omitted. Partial muntin omission is permissible, provided the remaining muntins are in standard position.

**All types—Stock.**

**Prices are subject to change without notice.**

# FEDERAL

## LIGHT CASEMENTS

### HARDWARE EXTRAS — LIST PRICES

Sill Adjusters for side hinged Vents, per Vent... \$3.00

Bronze Hardware:

(a) Non-Screen Type Casements.

Locking Handle, per side hinged or  
tilt-in Vent ..... 1.00  
Transom stay bar, per Vent..... 5.00

(b) Screen Type Casements.

For single Casement Vents, per Vent..... 1.50  
For pairs of adjacent Casement Vents,  
per pair..... 2.25  
For transom Vents, per Vent..... 2.00  
For tilt-in Vents, per Vent..... 1.00

Extra Glazing Clips per 1000 ..... 2.25

(Necessary Clips included with Casements)

Tapping holes for Shade Bracket Clips, per unit .25

Shade Bracket Clips, per pair ..... .75

## MULLIONS

Vertical			Horizontal	
	Std.	Corner		
1 Lt. High....	\$0.40	\$3.00	1 Lt. Wide....	\$0.70
2 Lt. High....	.60	4.00	2 Lt. Wide....	1.10
3 Lt. High....	.80	5.00	4 Lt. Wide....	2.00
4 Lt. High....	1.00	6.00	6 Lt. Wide....	2.80
5 Lt. High....	1.20	7.00	8 Lt. Wide....	3.70
6 Lt. High....	1.40	8.00	10 Lt. Wide....	4.50
			12 Lt. Wide....	5.40

Corner Mullion prices apply to standard pipe mullions up to and including 1½" inside diameter (outside diameter 1.90"). Support plates at head and sill are included in list price. All corner mullions must run full height of masonry opening. Corner mullions are designed and sold as non-load bearing members.

## STEEL ANGLE FINS ATTACHED

Head or Sill Fins		2 Jamb Fins	
Lts. Wide	Price	Lts. High	Price
1.....	\$0.40	1.....	\$0.80
2.....	.50	2.....	1.20
4.....	.80	3.....	1.60
6.....	1.10	4.....	2.00
8.....	1.40	5.....	2.40
CH1.....	2.60	6.....	2.80
CH2.....	2.80		
CH4.....	3.00		
CH6.....	3.50		

Fin prices include attachment before shipment except for large Windows when Windows and fins must be shipped unassembled.

All prices subject to change without notice

# FEDERAL

## LIGHT CASEMENTS

### LIST PRICES

#### EXTRA HEAD DRIPS

Head Drips are furnished without charge wherever Ventilators come to the head of the Windows. Where extra Head Drips are desired, add as follows:

1 Lt. Wide.....	\$0.30	6 Lt. Wide.....	\$0.90
2 Lt. Wide.....	.40	8 Lt. Wide.....	1.10
4 Lt. Wide.....	.70		

#### MASTIC AND PUTTY

Extra Mastic—Per lb.....	\$0.30
(Necessary mastic included with Casements, 1 lb. per 7' 0" perimeter)	
Gray Putty—25 lb. drum .....	5.00
(Putty is not included with Casements.)	

#### SCREENS

Screen prices are listed adjacent to the list prices of the Windows on which the Screens are to be used. For all jobs totaling less than 16 Screens add a crating charge of \$6.00 per order. (Figure 2 Screens for each double vent Casement, i.e., 42-43-44, etc.)

For No. 18 mesh add per Screen..... \$0.35

#### WOOD SURROUNDS IN SEPARATE PIECES

In openings having steel Mullions, figure wood surrounds for each Casement as given opposite the unit price and then deduct for the members to be omitted as per the following list. For openings having wood Mullions, figure surrounds for each Casement as given opposite the unit price and no deductions permitted for substitution of wood Mullions for head or jamb.

Do not build up Surround prices from these "per piece" prices.

Prices are shown on an unattached basis only, as only complete surrounds will be attached before shipment.

#### PER PIECE DEDUCTIONS

Lts. Wide	Head or Sill	Lts. High	Each Jamb
1.....	\$0.45	1.....	\$0.25
2.....	.55	2.....	.50
4.....	.90	3.....	.75
6.....	1.25	4.....	.95
8.....	1.55	5.....	1.20
		6.....	1.35

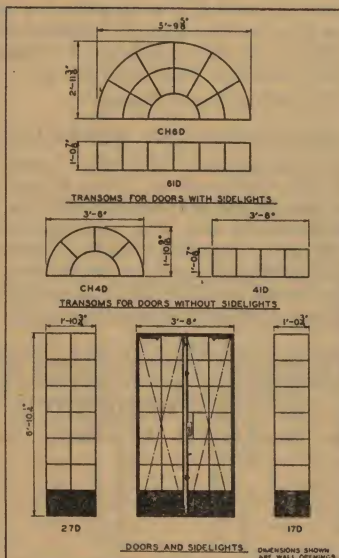
All types—Non-stock.

All prices subject to change without notice.

# FEDERAL

## CASEMENT DOOR—LIST PRICES

Casement Doors.....	\$136.00
For standard size as shown, open outward only.	
Hardware includes bronze cremone bolt operating both sides with safety lock on inside and bronze top and bottom bolts but no cylinders.	
Casement Door Cylinders, add for each.....	\$ 4.00
Sidelights (17D) per pair .....	20.00
Sidelights (27D) per pair .....	28.00
Transom (41D for Door only).....	4.70
Transom (61D for Door with Sidelights).....	5.20
Curved Transom (CH4D for Door only).....	16.60
Curved Transom (CH6D for Door with Sidelights).....	22.40
Vertical Mullions, 7 lights high per pair.....	16.40
Horizontal Mullions,	
4 lights wide, each.....	4.50
6 lights wide, each.....	7.00
8 lights wide, each.....	7.80



All types—Non-Stock.

All prices subject to change without notice.



# FEDERAL

## LIGHT CASEMENTS

### STEEL CASINGS

#### (Four Sided Frames)

#### Material and Construction:

Frames are 4-5/16" in depth from inside face of window to inside face of casing.

Frames are made of No. 18 gauge pressed steel at head and jambs and No. 16 gauge steel at sill.

Prices include attaching Casings to Casement before shipment. No deduction permitted if shipped unattached.

Open drilled holes to receive shade bracket clips are provided in steel Casings.

One standard shop coat of rust resisting paint is applied at Factory.

#### LIST PRICES

Case- ment Type	Cas- ing	Case- ment Type	Cas- ing	Case- ment Type	Cas- ing
11	\$4.30	41	\$ 6.30	81	\$ 9.45
12	5.25	42	7.25	82	10.40
13	6.20	43	8.25	83	11.40
14	7.15	44	9.20	84	12.35
15	8.10	45	10.20	85	13.35
16	9.05	46	11.15	86	14.30
21	4.75	61	7.90		
22	5.70	62	8.85		
23	6.65	63	9.85		
24	7.60	64	10.80		
25	8.60	65	11.75		
26	9.55	66	12.70		

#### Shade and Drapery Bracket Reinforcing:

For furnishing reinforcing plates for attaching shade or drapery hardware, per pair... \$0.50

Additional for tapped holes in plates, if required, per pair..... .25

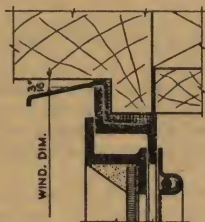
All types—Non-Stock.

All prices subject to change without notice.

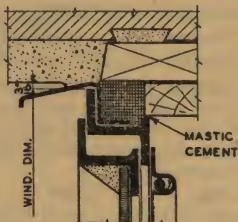


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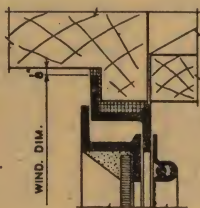
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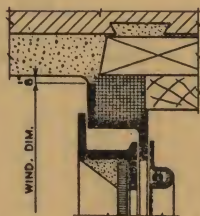
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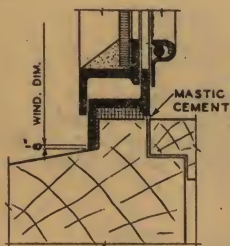
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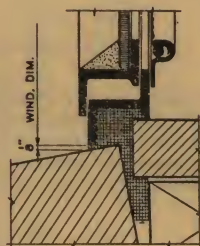


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WOOD FRAME

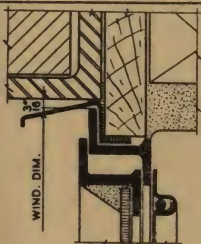


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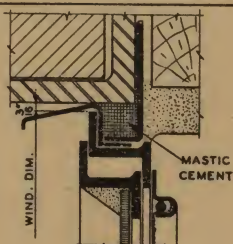
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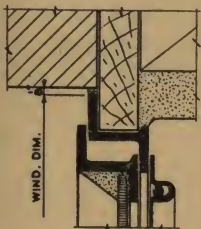
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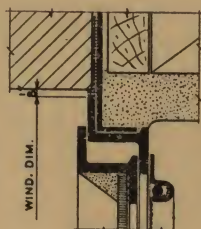
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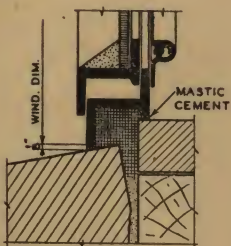
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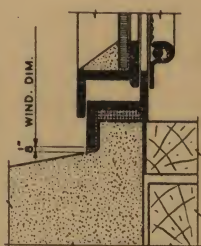


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SILL

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SILL

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